

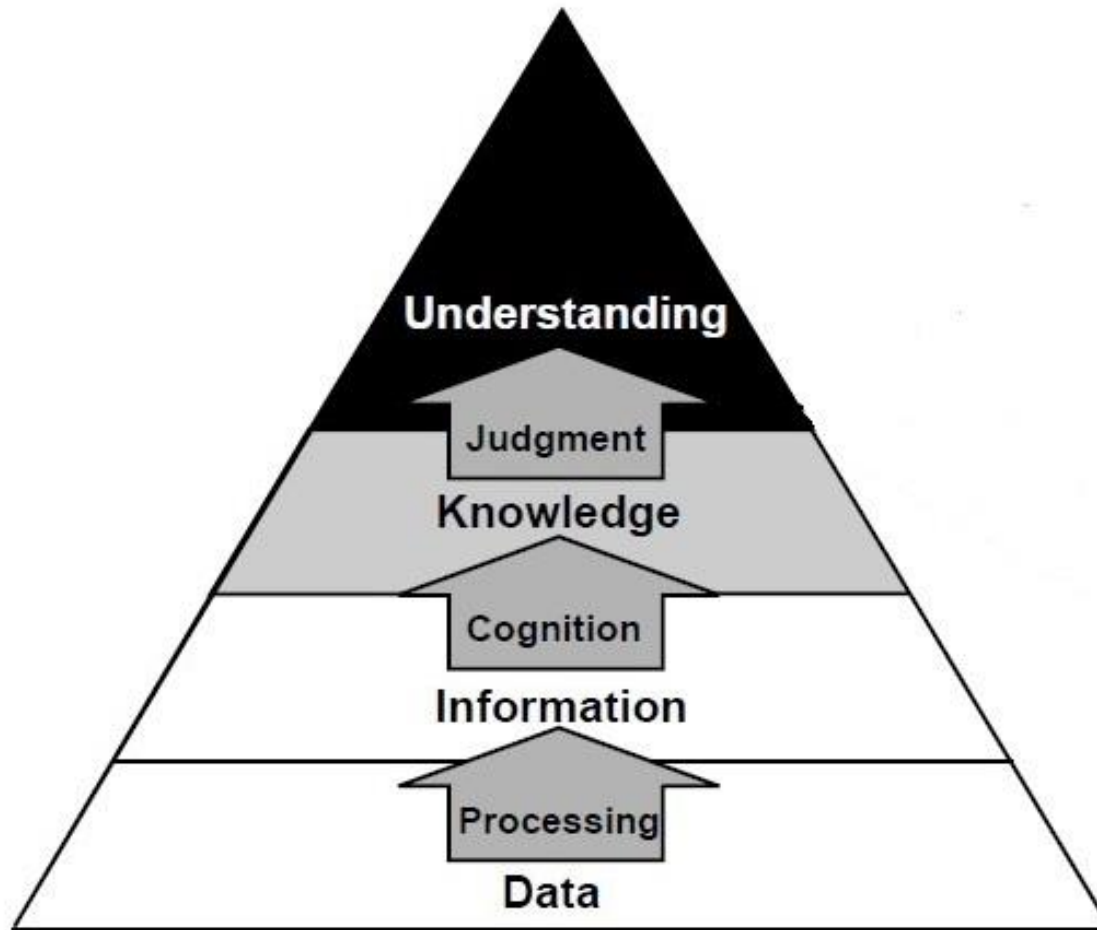


Managing Fuel Infrastructure Integrity and Uncertainty

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Theory of Cognitive Hierarchy



US Army FM 100-5

Levels of Uncertainty as Quadrants



Unknown known: A range of outcomes; information asymmetry – what is unknown to you is known to others; avoidable risk

Unknown unknown: Ambiguity, no basis to forecast; transitory, tends to migrate toward another level over time; uncontrollable risk

3 Unknown Known	4 Unknown Unknown
1 Known Known	2 Known Unknown

Known known: Clear enough future; This is the realm most people operate in; controllable risk

Known unknown: Several discrete outcomes which can be identified; calculated risk